

PTO/SB/08A (08-03)

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| Substitute for form 1449A/1450 INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use as many sheets as necessary) | | | | Application Number | | 10/688,559 | |
| | | | | Filing Date | | 10/16/2003 | |
| | | | | First Named Inventor: | | Christophe Pierrat | |
| | | | | Examiner: A. Thompson PAUL DINH | | GROUP: 2825 | |
| Sheet | 1 | of | 1 | Attorney Docket Number | | NTI-019-5-1D | |
| U.S. PATENT DOCUMENTS | | | | | | | |
| Examiner Initials* | Cited No. ¹ | Document Number Number - Kind Code ^{2(f/known)} | | Publication Date MM-DD-YYYY | Name of Patentee or Applicant of Cited Document | Pages, Columns, Lines Where Relevant Passages or Figures Appear | |
| PD | A01 | US-6,610,989 | B1 | 08/26/2003 | Takahashi | | |
| | A02 | US-6,370,441 | B1 | 04/09/2002 | Ohnuma | | |
| | A03 | US-6,145,118 | | 11/07/2000 | Tomita | | |
| | A04 | US-6,067,375 | | 05/23/2000 | Tsudaka | | |
| | A05 | US-6,058,203 | | 05/02/2000 | Tsudaka | | |
| | A06 | US-6,042,257 | | 03/28/2000 | Tsudaka | | |
| | A07 | US-5,885,748 | | 03/23/1999 | Ohnuma | | |
| PD | A08 | US-5,792,581 | | 08/11/1998 | Ohnuma | | |
| FOREIGN PATENT DOCUMENTS | | | | | | | |
| Examiner Initials* | Cite No. ¹ | Foreign Patent Document Cntry Code ³ Number ⁴ Kind Code ^{5(f/known)} | | Publication Date MM-DD-YYYY | Name of Patentee or Applicant of Cited Document | Pages, Columns, Lines Where Relevant Passages or Figures Appear | T ⁶ |
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| OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.) | | | | | | | |
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| EXAMINER SIGNATURE: Paul Dinh | | | | DATE CONSIDERED: 2/21/06 | | | |

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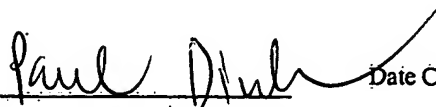
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| INFORMATION DISCLOSURE CITATION PTO-1449 | | ATTY. DOCKET NO. NTI-019-5-1D | | SERIAL NO. 10/688559 Filed Herewith | | | |
|-------------------------------------------------------------------|------------|-----------------------------------------------|--------------------|-----------------------------------------------|----------|-------------|--------|
| | | APPLICANT Pierrat, et al. | | | | | |
| | | FILING DATE Filed Herewith 10/16/03 | | GROUP 2825 | | | |
| U.S. PATENT DOCUMENTS | | | | | | | |
| EXAMINER'S INITIALS | PATENT NO. | DATE | NAME | CLASS | SUBCLASS | FILING DATE | |
| PD | 4,231,811 | 11/4/80 | Somekh, et al. | 148 | 1.5 | 9/13/79 | |
| | 4,456,371 | 6/26/84 | Lin | 355 | 71 | 6/30/82 | |
| | 4,902,899 | 2/20/90 | Lin, et al. | 250 | 492.1 | 6/1/87 | |
| | 5,498,579 | 3/12/96 | Borodovsky, et al. | 437 | 250 | 6/8/94 | |
| | 5,553,274 | 9/3/96 | Liebmann | 395 | 500 | 6/6/95 | |
| | 5,636,002 | 6/3/97 | Garofalo | 355 | 53 | 10/31/95 | |
| | 5,663,017 | 9/2/97 | Schinella, et al. | 430 | 5 | 6/7/95 | |
| | 5,723,233 | 3/3/98 | Garza, et al. | 430 | 5 | 2/27/96 | |
| | 5,766,806 | 6/16/98 | Spence | 430 | 5 | 9/9/96 | |
| | 5,821,014 | 10/13/98 | Chen, et al. | 430 | 5 | 2/28/97 | |
| | 5,862,058 | 1/19/99 | Samuels, et al. | 364 | 491 | 5/16/96 | |
| | 5,879,844 | 3/9/99 | Yamamoto, et al. | 430 | 30 | 12/20/96 | |
| | 5,885,734 | 3/23/99 | Pierrat, et al. | 430 | 5 | 8/15/96 | |
| | 5,900,338 | 5/4/99 | Garza, et al. | 430 | 5 | 8/15/97 | |
| | 5,994,002 | 11/30/99 | Matsuoka | 430 | 5 | 9/4/97 | |
| | 6,004,702 | 12/21/99 | Lin | 430 | 5 | 5/21/98 | |
| | 6,077,310 | 6/20/00 | Yamamoto, et al. | 716 | 19 | 1/29/99 | |
| | PD | 6,078,738 | 6/20/00 | Garza, et al. | 395 | 500.22 | 5/8/97 |
| | | | | | | | |
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| EXAMINER Paul Dink | | DATE CONSIDERED 2/21/06 | | | | | |

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| INFORMATION DISCLOSURE CITATION PTO-1449 | | Atty. Docket No. NTI-019-5-1D Applicant PIERRAT, Christophe Filing Date 10/16/03 Group 2825 Filed Herewith | | Serial No. 10/688559 Filed Herewith | | |
|-------------------------------------------------------------------|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|---------------------------------------------------|----------|----------------|
| U.S. PATENT DOCUMENTS | | | | | | |
| EXAMINER'S INITIALS | PATENT NO. | DATE | NAME | CLASS | SUBCLASS | FILING DATE |
| PD | 4,426,584 | 1/17/1984 | Bohlen, et al. | 250 | 492.2 | 6/3/1981 |
| | 4,895,780 | 1/23/1990 | Nissan-Cohen, et al. | 430 | 5 | 10/25/1988 |
| | 5,208,124 | 5/4/1993 | Sporon-Fiedler, et al. | 430 | 5 | 3/19/1991 |
| | 5,682,323 | 10/28/1997 | Pasch, et al. | 364 | 491 | 3/6/1995 |
| | 5,958,635 | 9/28/1999 | Reich, et al. | 430 | 30 | 10/20/1997 |
| | 5,972,541 | 10/26/1999 | Sugasawara, et al. | 430 | 5 | 3/4/1998 |
| | 6,007,310 | 12/28/1999 | Jacobsen, et al. | 417 | 362 | 5/23/1997 |
| | 6,114,071 | 9/5/2000 | Chen, et al. | 430 | 5 | 4/6/1998 |
| | 6,289,499 | 9/11/2001 | Rieger, et al. | 716 | 21 | 1/7/2000 |
| PD | 6,249,597 B1 | 6/19/2001 | Tsudaka | 382 | 144 | 12/17/1998 |

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Date Considered:

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|-------------------------------------------------------------------|-----------------|------------|-----------------------------------------|-------|-----------------------------------------------------------------|----------------|
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| U.S. PATENT DOCUMENTS | | | | | | |
| EXAMINER'S INITIALS | PATENT NO. | DATE | NAME | CLASS | SUBCLASS | FILING DATE |
| PD | 6,014,456 | 1/11/2000 | Tsudaka | 382 | 144 | 7/15/1996 |
| | 6,154,563 | 11/28/2000 | Tsudaka | 382 | 144 | 12/17/1998 |
| | 6,298,473 B1 | 10/2/2001 | Ono, et al. | 716 | 21 | 12/3/1998 |
| | 6,453,457 B1 | 9/17/2002 | Pierrat, et al. | 716 | 19 | 9/29/2000 |
| PD | 2002/0100004 A1 | 7/25/2002 | Pierrat, et al. | 716 | 5 | 3/15/2002 |

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| | PIERRAT, Christophe | |
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| | 10/16/03 | 2825 |
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U.S. PATENT DOCUMENTS

| EXAMINER'S INITIALS | PATENT NO. | DATE | NAME | CLASS | SUBCLASS | FILING DATE |
|------------------------|--------------|------------|-------------------|-------|----------|----------------|
| PD | 5,991,006 | 11/23/0199 | Tsudaka | 355 | 53 | 10/27/1997 |
| | 6,243,855 B1 | 6/5/2001 | Kobayashi, et al. | 716 | 19 | 9/29/1998 |

| | | | | |
|-----------|---------|----------------|-----|----|
| 5,663,893 | 09-1997 | Wampler et al. | 716 | 19 |
| 6,416,907 | 07-2002 | Winder et al. | 430 | 5 |
| 6,453,457 | 09-2002 | Pierrat et al. | 716 | 19 |
| 6,523,162 | 02-2003 | Agrawal et al. | 716 | 19 |

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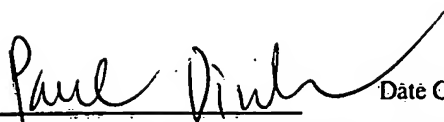
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| | | Applicant PIERRAT, Christophe | | Filing Date 10/16/03 Group 2825 | | | |
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| FOREIGN PATENT DOCUMENTS | | | | | | | |
| Ref ID | PATENT NO. | DATE | COUNTRY | CLASS | SUBCLASS | TRANSLATION | |
| | | | | | | YES | NO |
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| 00077 | WO 00/67075 A1 | 11/9/2000 | WO | | | <input type="checkbox"/> | <input type="checkbox"/> |
| 00078 | WO 00/67076 A1 | 11/9/2000 | WO | | | <input type="checkbox"/> | <input type="checkbox"/> |

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| FOREIGN PATENT DOCUMENTS | | | | | | | |
| EXAMINER'S INITIALS | PATENT NO. | DATE | COUNTRY | CLASS | SUBCLASS | TRANSLATION | |
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| | 11-143085 | 5/28/99 | JP | | | <input type="checkbox"/> | <input type="checkbox"/> |
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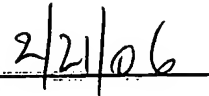
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|-------------------------------------------------------------------|-------------|-----------------------------------------|---------|-----------------------------------------------------------------|----------|--------------------------|--------------------------|
| | | Applicant PIERRAT, Christophe | | Filing Date 10/16/03 Group 2825 Filed Herewith | | | |
| FOREIGN PATENT DOCUMENTS | | | | | | | |
| EXAMINER'S INITIALS | PATENT NO. | DATE | COUNTRY | CLASS | SUBCLASS | TRANSLATION | |
| | | | | | | YES | NO |
| PD | 3-80525 | 4/5/1991 | JP | | | <input type="checkbox"/> | <input type="checkbox"/> |
| PD | 2,324,169 A | 10/14/1998 | GB | | | <input type="checkbox"/> | <input type="checkbox"/> |
| PD | WO 99/47981 | 9/23/1999 | WU | | | <input type="checkbox"/> | <input type="checkbox"/> |

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| | | Filed Herewith | |
| OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.) | | | |
| Ref ID | CITATION | | |
| 00082 | Barouch, E., et al., "OPTIMASK: An OPC Algorithm for Chrome and Phase-Shift Mask Design", SPIE, Vol. 2440, pp. 192-206, February 1995. | | |
| 00084 | Brunner, T., et al., "Approximate Models for Resist Processing Effects", SPIE, Vol. 2726, pp. 198-207, March 1996. | | |
| 00085 | Brunner, T., "Rim Phase-Shift Mask Combined with Off-Axis Illumination: A Path to 0.5(lampda) / Numerical Aperture Geometries", Optical Engineering, Vol. 32, No. 10, pp. 2337-2343, October 1993. | | |
| 00086 | Casey, Jr., J.D., et al., "Chemically Enhanced FIB Repair of Opaque Defects on Molybdenum Silicide Photomasks", SPIE, Vol. 3236, pp. 487-497 (1997). | | |
| 00087 | Chang, K., et al., "Accurate Modeling of Deep Submicron Interconnect Technology", TMA Times, Vol. IX, No. 3 (1997). | | |
| 00094 | Gans, F., et al., "Printability and Repair Techniques for DUV Photomasks", SPIE, Proceedings Of The 17th Annual Symposium On Photomask Technology And Management, Vol. 3236, pp. 136-141 (1997). | | |
| 00099 | Ham, Y.M., et al., "Dependence of Defects in Optical Lithography", Jpn. J. Appl. Phys., Vol. 31, pp. 4137-4142 (1992). | | |
| 00101 | Henke, W., et al., "A Study of Reticle Defects Imaged Into Three-Dimensional Developed Profiles of Positive Photoresist Using the Solid Lithography Simulator", Microelectronics Eng., Vol. 14, pp. 283-297 (1991). | | |
| 00102 | Ibsen, K., et al., "Clear Field Reticle Defect Disposition for Advanced Sub-Half Micron Lithography", SPIE, Proceedings Of The 17th Annual Symposium On Photomask Technology And Management, Vol. 3236, pp. 124-135 (1997). | | |
| 00105 | Ishiwata, N., et al., "Novel Alternating Phase Shift Mask with Improved Phase Accuracy", SPIE, Proceedings Of The 17th Annual Symposium On Photomask Technology And Management, Vol. 3236, pp. 243-249 (1997). | | |
| 00106 | Jinbo, H., et al., "0.2um or Less i-Line Lithography by Phase-Shifting-Mask Technology", IEEE, pp. 33.3.1-33.3.4 (1990). | | |
| 00107 | Jinbo, H., et al., "Application of Blind Method to Phase-Shifting Lithography", IEEE, 1992 Symposium On VLSI Technology Digest Of Technical Papers, pp. 112-113 (1992). | | |
| 00108 | Jinbo, H., et al., "Improvement of Phase-Shifter Edge Line Mask Method", Japanese Journal Of Applied Physics, Vol. 30, No. 11B, pp. 2998-3003, November 1991. | | |
| 00109 | Karklin, L., "A Comprehensive Simulation Study of the Photomask Defects Printability", SPIE, Vol. 2621, pp. 490-504 (1995). | | |

| | | | |
|-------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|-------------------|
| INFORMATION DISCLOSURE CITATION SUMMARY | | Atty. Docket No. | Serial No. |
| | | NTI-019-5-1D | Filed Herewith |
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| | | Filed Herewith | |
| OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.) | | | |
| Ref ID | CITATION | | |
| 00110 | Kimura, T., et al., "Subhalf-Micron Gate GaAs Mesfet Process Using Phase-Shifting-Mask Technology", IEEE, GaAs IC Symposium, pp. 281-284 (1991). | | |
| 00115 | Lithas, "Lithas: Optical Proximity Correction Software" (2 pages). | | |
| 00118 | Microunity, "OPC Technology & Product Description", MicroUnity Systems Engineering, Inc., pp. 1-5. | | |
| 00120 | Morimoto, H., et al., "Next Generation Mask Strategy - Technologies are Ready for Mass Production of 256MDRAM?", SPIE, Vol. 3236, pp. 188-189 (1997). | | |
| 00121 | Nistler, J., et al., "Large Area Optical Design Rule Checker for Logic PSM Application", SPIE, Photomask And X-Ray Mask Technology, Vol. 2254, pp. 78-92 (1994). | | |
| 00122 | Nistler, J., et al., "Phase Shift Mask Defect Printability Analysis", Proceedings Of The Microlithography Seminar INTERFACE '93, OCG Microelectronic Materials, Inc., pp. 11-28 (1993). | | |
| 00123 | Ohtsuka, H., et al., "Phase Defect Repair Method for Alternating Phase Shift Masks Conjugate Twin-Shifter Method", Jpn. J. Appl. Phys., Vol. 31, pp. 4143-4149 (1992). | | |
| 00124 | Park, C., et al., "An Automatic Gate CD Control for a Full Chip Scale SRAM Device", SPIE, Vol. 3236, pp. 350-357 (1997). | | |
| 00125 | Pai, Y.C., et al., "Exploiting Structure in Fast Aerial Image Computation for Integrated Circuit Patterns", IEEE Transactions On Semiconductor Manufacturing, Vol. 10, No. 1, pp. 62-74, February 1997. | | |
| 00126 | Pai, Y.C., et al., "Phase-Shifting Masks for Microlithography: Automated Design and Mask Requirements", J. Opt. Soc. Am., Vol. 11, No. 9, pp. 2438-2452, September 1994. | | |
| 00128 | Precim, "Proxima System", Precim Company, Portland, Oregon (2 pages). | | |
| 00129 | Precim, "Proxima Wafer Proximity Correction System", Precim Company, Portland, Oregon (2 pages). | | |
| 00130 | Kieger, M., et al., "Customizing Proximity Correction for Process-Specific Objectives", SPIE, Vol. 2726, pp. 651-659 (1996). | | |
| 00131 | Kieger, M., et al., "Mask Fabrication Rules for Proximity-Corrected Patterns", Precim Company, Portland, Oregon (10 pages). | | |

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|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------|
| INFORMATION DISCLOSURE CITATION SUMMARY | | Atty. Docket No. | Serial No. |
| | | NTI-019-5-1D | |
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| OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.) | | | |
| Ref ID | CITATION | | |
| 00132 | Rieger, M., et al., "System for Lithography Proximity Compensation", Precim Company, Portland, Oregon, September 1993 (28 pages). | | |
| 00133 | Rieger, M., et al., "Using Behavior Modeling for Proximity Correction", Precim Company, Portland, Oregon (6 pages). | | |
| 00134 | Roman, B., et al., "Implications of Device Processing on Photomask CD Requirements", SPIE, Vol. 3236 (1997) (Abstract Only). | | |
| 00136 | Spence, C., et al., "Automated Determination of CAD Layout Failures Through Focus: Experiment and Simulation", SPIE, Vol. 2197, pp. 302-313 (1994). | | |
| 00137 | Spence, C., et al., "Detection of 60(degree) Phase Defects on Alternating PSMs", Advanced Micro Devices, KLA-Tencor, DuPont RTC (2 pages). | | |
| 00140 | Stimiman, J., et al., "Fast Proximity Correction with Zone Sampling", SPIE, Vol. 2197, pp. 294-301 (1994). | | |
| 00141 | Stimiman, J., et al., "Optimizing Proximity Correction for Wafer Fabrication Processes", SPIE, Photomask Technology And Management, Vol. 2322, pp. 239-246 (1994). | | |
| 00142 | Stimiman, J., et al., "Spatial Filter Models to Describe IC Lithographic Behavior", Precim Corporation, Portland, Oregon (10 pages). | | |
| 00143 | Stimiman, J., et al., "Wafer Proximity Correction and Its Impact on Mask-Making", Bocus News, Vol. 10, Issue 1, pp. 1, 3-7, 10-12, January 1994. | | |
| 00144 | Sugawara, M., et al., "Defect Printability Study of Attenuated Phase-Shifting Masks for Specifying Inspection Sensitivity", Sony Corporation, Kanagawa, Japan (16 pages). | | |
| 00146 | Trans Vector, "Now Better Quality Photomasks", Trans Vector Technologies, Inc., Camarillo, California (4 pages). | | |
| 00147 | Vacca, A., et al., "100nm Defect Detection Using a Dynamically Programmable Image Processing Algorithm", SPIE, Vol. 3236 (1997) (Abstract Only). | | |
| 00148 | Vacca, A., et al., "100nm Defect Detection Using an Existing Image Acquisition System", SPIE, Vol. 3236, pp: 208-21 (1998). | | |
| 00149 | Watanabe, H., et al., "Detection and Printability of Shifter Defects in Phase-Shifting Masks II Defocus Characteristics", Jpn. J. Appl. Phys., Vol. 31, pp. 4155-4160 (1992). | | |

| | | | |
|-------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|-------------------------------------|
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| OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.) | | | |
| Ref ID | CITATION | | |
| 00150 | Wiley, J., et al., "Device Yield and Reliability by Specification of Mask Defects", Solid State Technology, Vol. 36, No. 7, pp. 65-66, 70, 72, 74, 77, July 1993. | | |
| 00151 | Wiley, J., et al., "The Effect of Off-Axis Illumination on the Printability of Opaque and Transparent Reticle Defects", SPIE, Vol. 2512, pp. 432-440 (1995). | | |
| 00152 | Wiley, J., et al., "Phase Shift Mask Pattern Accuracy Requirements and Inspection Technology", SPIE, Integrated Circuit Metrology, Inspection, And Process Control V, Vol. 1464, pp. 346-355 (1991). | | |
| 00153 | Yen, A., et al., "Characterization and Correction of Optical Proximity Effects in Deep-Ultraviolet Lithography Using Behavior Modeling", J. Vac. Sci. Technol. B, Vol. 14, No. 6, pp. 4175-4178, November/December 1996. | | |
| 00157 | Cobb, et al., "Fast Sparse Aerial Image Calculation for OPC", SPIE, Vol. 2621, pp. 534-544, September 20-22, 1995. | | |

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|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| INFORMATION DISCLOSURE CITATION PTO-1449 | ATTY. DOCKET NO. NTI-019-5-1D | SERIAL NO. 10/689559 Filed Herewith |
| | APPLICANT Pierrat, et al | |
| | FILING DATE 10/16/03 Filed Herewith | GROUP 2825 |
| OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.) | | |
| PD | Ackmann, P. et al., "Phase Shifting And Optical Proximity Corrections To Improve CD Control On Logic Devices In Manufacturing For Sub 0.35 μ m I-Line", Advance Micro Devices (8 pages). | |
| | Asai, N. et al., "Proposal For The Coma Aberration Dependent Overlay Error Compensation Technology", <i>Jpn. J. Appl. Phys.</i> , Vol. 37, pp. 6718-6722 (1998). | |
| | Chen, J.F. et al., "Full-Chip Optical Proximity Correction With Depth Of Focus Enhancement", <i>Microolithography World</i> (1997). | |
| | Chen, J.F. et al., "Optical Proximity Correction For Intermediate-Pitch Features Using Sub-Resolution Scattering Bars", MicroUnity Systems Engineering, Inc., Sunnyvale, California, pp. 1-16. | |
| | Chen, J.F., et al., "Practical Method For Full-Chip Optical Proximity Correction", MicroUnity Systems Engineering, Inc., Sunnyvale, California (14 pages). | |
| | Garofalo, J. et al., "Automated Layout Of Mask Assist-Features For Realizing 0.5k ₁ ASIC Lithography", <i>SPIE</i> , Vol. 2440, pp. 302-312 (1995). | |
| | Garofalo, J. et al., "Automatic Proximity Correction For 0.35 μ m I-Line Photolithography", <i>IEEE</i> , pp. 92-94 (1994). | |
| | Garofalo, J. et al., "Mask Assisted Off-Axis Illumination Technique For Random Logic", <i>J. Vac. Sci. Technol. B</i> , Vol. 11, No. 6, pp. 2651-2658, November/December 1993. | |
| | Gotoh, Y. et al., "Pattern Dependent Alignment Technique For Mix-And-Match Electron-Beam Lithography With Optical Lithography", <i>J. Vac. Sci. Technol. B</i> , Vol. 16, No. 6, pp. 3202-3205, November/December 1998. | |
| | Harafuji, K. et al., "A Novel Hierarchical Approach For Proximity Effect Correction In Electron Beam Lithography", <i>IEEE</i> , Vol. 12, No. 10, pp. 1508-1514, October 1993. | |
| | Lin, B.J., "Methods To Print Optical Images At Low-k ₁ Factors", <i>SPIE</i> , Optical/Laser Microlithography III, Vol. 1264, pp. 2-13 (1990). | |
| | Pierrat, C. et al., "A Rule-Based Approach To E-Beam And Process-Induced Proximity Effect Correction For Phase-Shifting Mask Fabrication", <i>SPIE</i> , Vol. 2194, pp. 298-309 (1994). | |
| PD | Precim, "Proxima System", Precim Company, Portland, Oregon (2 pages). | |
| EXAMINER Paul Dink | DATE CONSIDERED 2/21/06 | |

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP § 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| INFORMATION DISCLOSURE CITATION PTO-1449 | ATTY. DOCKET NO. NTI-019-5-1D | SERIAL NO. 10/688559 Filed Herewith |
| | APPLICANT Pierrat, et al. | |
| | FILING DATE 10/16/03 Filed Herewith | GROUP 2825 |
| OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.) | | |
| PD | Saleh, B. et al., "Reduction Of Errors Of Microphotographic Reproductions By Optimal Corrections Of Original Masks", <i>Optical Engineering</i> , Vo. 20, No. 5, pp. 781-784, September/October 1981. | |
| PD | Spence, C. et al., "Integration Of Optical Proximity Correction Strategies In Strong Phase Shifters Design For Poly-Gate Layers", <i>Bacus News</i> , Vol. 15, Issue 12, pp. 1, 4-13, December 1999. | |
| EXAMINER Paul R. [Signature] | DATE CONSIDERED 2/21/06 | |

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| | | NTI-019-5-1D | 10/688559 |
| | | Applicant | Filed Herewith |
| | | PIERRAT, Christophe | |
| | | Filing Date | Group |
| | | 10/16/03 | 2825 |
| | | Filed Herewith | |
| OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.) | | | |
| EXAMINER'S INITIALS | CITATION | | |
| PD | Choi, Y., et al., "Optical Proximity Correction on Attenuated Phase Shifting Photo Mask for Dense Contact Array", LG Semicon Company (11 pages). | | |
| | Lucas, K., et al., "Model Based OPC for 1st Generation 193nm Lithography", Motorola Inc., IDT assignee to IMEC (12 pages). | | |
| | Sturman, J., et al., "Quantifying Proximity and Related Effects in Advanced Wafer Processes", Precim Company, Hewlett Packard Labs (9 pages). | | |
| | Sugawara, M., et al., "Practical Evaluation of Optical Proximity Effect Correction by EDM Methodology", Sony Corporation (11 pages). | | |
| | Granik, Y., et al., "MEEF as a Matrix", Mentor Graphics Corporation (11 pages). | | |
| | Kang, D., et al., "Effects of Mask Bias on the Mask Error Enhancement Factor (MEEF) of Contact Holes" (11 pages). | | |
| | Matsuura, S., et al., "Reduction of Mask Error Enhancement Factor (MEEF) by the Optimum Exposure Dose Self-Adjusted Mask", NEC Corporation (12 pages). | | |
| | Saleh, B., et al., "Reduction of Errors of Microphotographic Reproductions by Optimal Corrections of Original Masks", Optical Engineering, Vol. 20, No. 5, pp. 781-784, September/October 1981. | | |
| | Fu, C.C., et al., "Enhancement of Lithographic Patterns by Using Serif Features", IEEE, Transactions On Electron Devices, Vol. 38, No. 12, pp. 2599-2603, December 1991. | | |
| | Henderson, R., et al., "Optical Proximity Effect Correction: An Emerging Technology", Microlithography World, pp. 6-12 (1994). | | |
| | Dolainsky, C., et al., "Application of a Simple Resist Model to Fast Optical Proximity Correction", SPIE, Vol. 3051, pp. 774-780 (1997). | | |
| | Chen, J., et al., "Full-Chip Optical Proximity Correction with Depth of Focus Enhancement", Microlithography World (5 pages) (1997). | | |
| | Wong, A., et al., "Lithographic Effects of Mask Critical Dimension Error", SPIE, Vol. 3334, pp. 106-115 (1998). | | |
| PD | Spence, C., et al., "Integration of Optical Proximity Correction Strategies in Strong Phase Shifters Design for Poly-Gate Layers", Bacus News, Vol. 15, Issue 12, pp. 1, 4-13, December 1999. | | |

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| INFORMATION DISCLOSURE CITATION PTO-1449 | | Atty. Docket No. NTI-019-5-1D | Serial No. 10/688559 Filed Herewith |
| | | Applicant PIERRAT, Christophe | Filing Date 10/16/03 Group 2825 Filed Herewith |
| OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.) | | | |
| EXAMINER'S INITIALS | CITATION | | |
| PD | Balasinski, A., et al., "Comparison of Mask Writing Tools and Mask Simulations for 0.16um Devices", IEEE, SEMI Advanced Semiconductor Manufacturing Conference, pp. 372-377 (1999). | | |

EXAMINER:

Paul Dink

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2/21/06

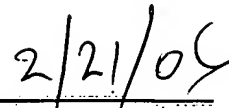
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| | | Filed Herewith | |
| OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.) | | | |
| EXAMINER'S INITIALS | CITATION | | |
| PD | Chuang, H., et al., "Practical Applications of 2-D Optical Proximity Corrections for Enhanced Performance of 0.25um Random Logic Devices", IEEE, pp. 18.7.1-18.7.4, December 1997. | | |

EXAMINER:



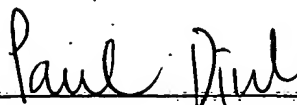
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| INFORMATION DISCLOSURE CITATION PTO-1449 | Atty. Docket No. NTI-019-S-1D Applicant PIERRAT, Christophe Filing Date 10/16/03 Group 2825 Filed Herewith | Serial No. 10/688559 Filed Herewith |
| | OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.) | |
| EXAMINER'S INITIALS | CITATION | |
| PD | Cobb, N., et al., "Fast, Low-Complexity Mask Design", SPIE, Vol. 2440, pp. 313-327, February 22-24, 1995. | |
| | Cobb, N., et al., "Experimental Results on Optical Proximity Correction With Variable Threshold Resist Model", SPIE, Vol. 3051, pp. 458-468, March 12-14, 1997. | |
| | Cobb, N., "Fast Optical and Process Proximity Correction Algorithms for Integrated Circuit Manufacturing", Dissertation, University of California at Berkeley, UMI Microform 9902038 (139 pages). | |
| PD | Toublan, O., et al., "Phase Aware Proximity Correction for Advanced Masks", SPIE, Vol. 4000, pp. 160-170, March 1-3, 2000. | |

EXAMINER:



Date Considered:

2/21/06

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